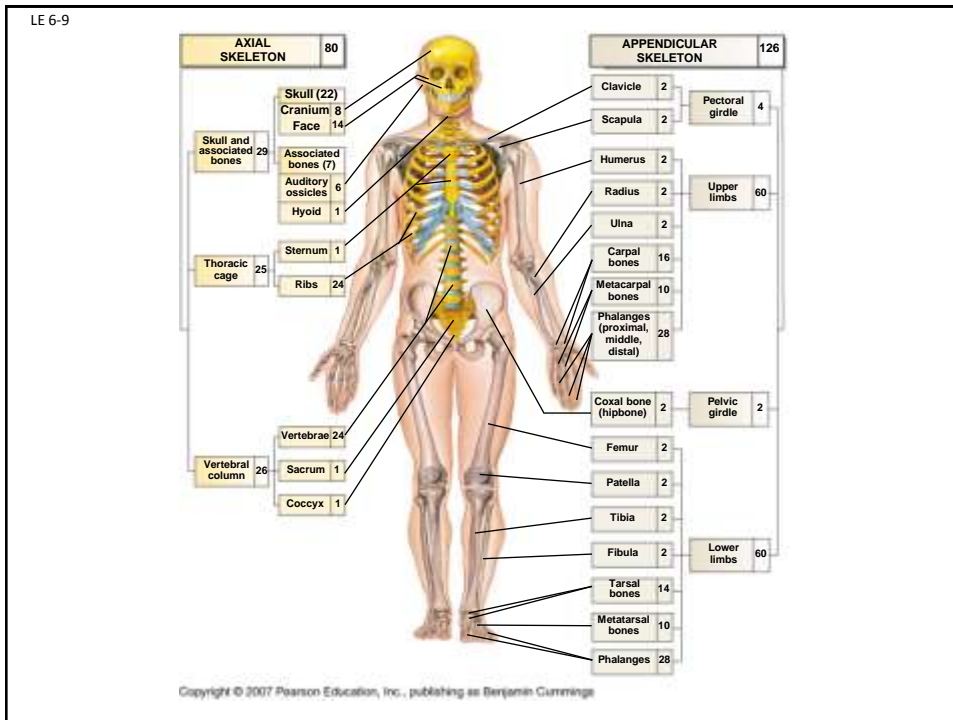


The Skeleton: An Overview

Skeletal Divisions

- 206 bones & associated cartilages
- 2 divisions
 - Axial (80)
 - Skull (22) + ossicles + hyoid
 - Thoracic cage (24 ribs + sternum)
 - Vertebral column (26)
 - Appendicular (126)
 - Limbs
 - Pectoral + pelvic girdles (attach limbs to trunk)



The Axial Division

- Supports & protects organs in cranial, spinal, and ventral cavities
- Provides extensive surface area for attachment of muscles

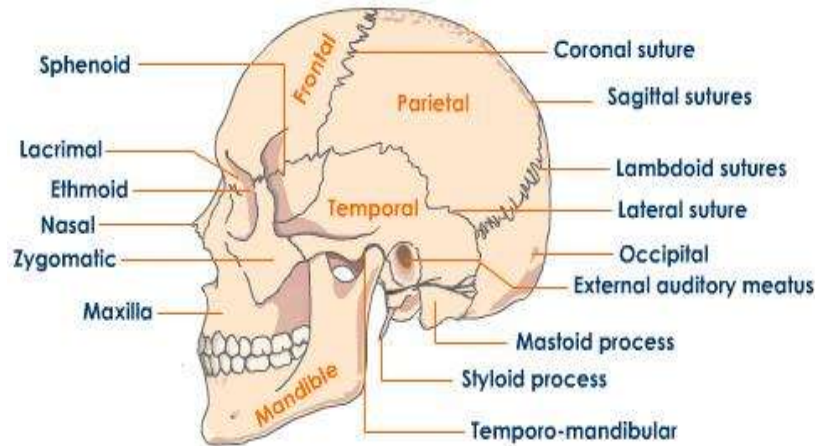
SKULL...

- Formed by cranial and facial bones
- Cranial bones (8 bones)
 - enclose & protect the brain
 - provide attachment sites for head and neck muscles

SKULL...

- Facial bones (14 bones)
 - form framework of the face
 - form cavities for the sense organs of sight, taste, smell
 - provide openings for the passage of air, food, scents
 - hold the teeth
 - anchor muscles of the face

BONES OF THE SKULL



SKULL...

- Sutures –
 - skull bones (flat) are united by interlocking, immovable joints
 - in fetal skulls - called fontanel

Sutures

1. Coronal - between frontal and parietal bones
2. Lambdoidal - between occipital and parietal bones
3. Squamosal - between temporal and parietal bones
4. Sagittal - between parietal bones

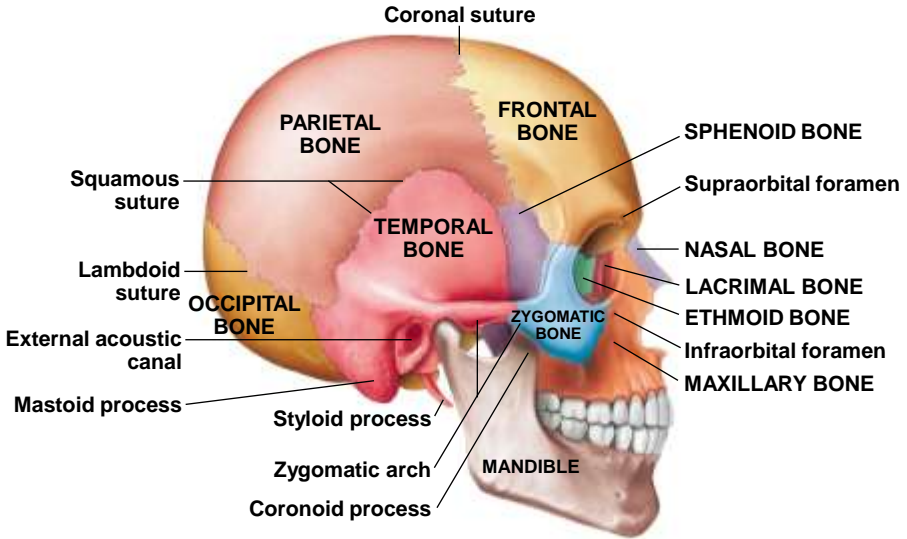
TOPOGRAPHY

- Foramen - refers to any small opening



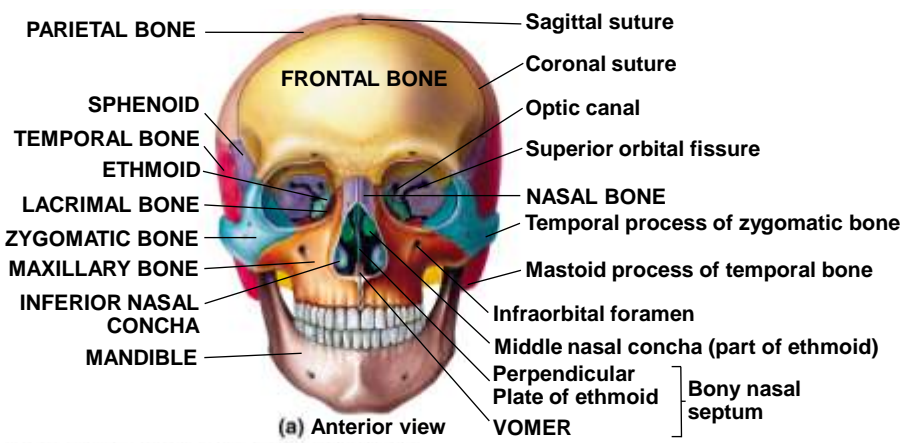
Mental Foramen

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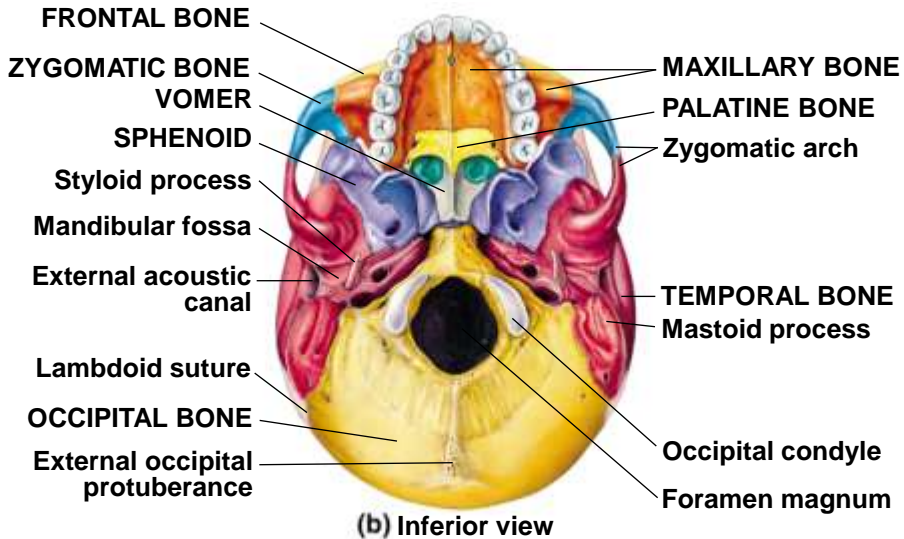
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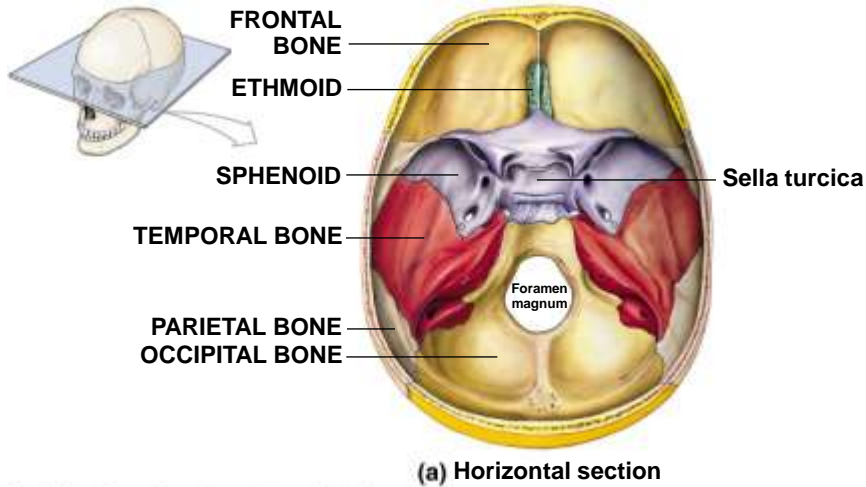
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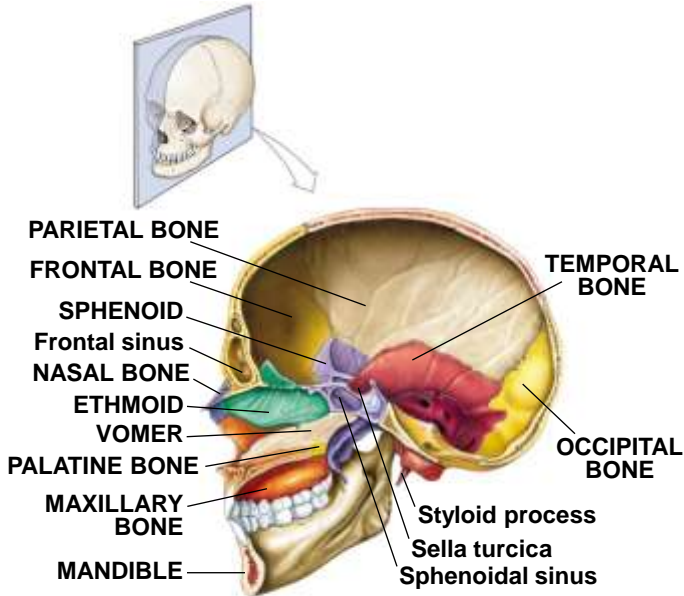
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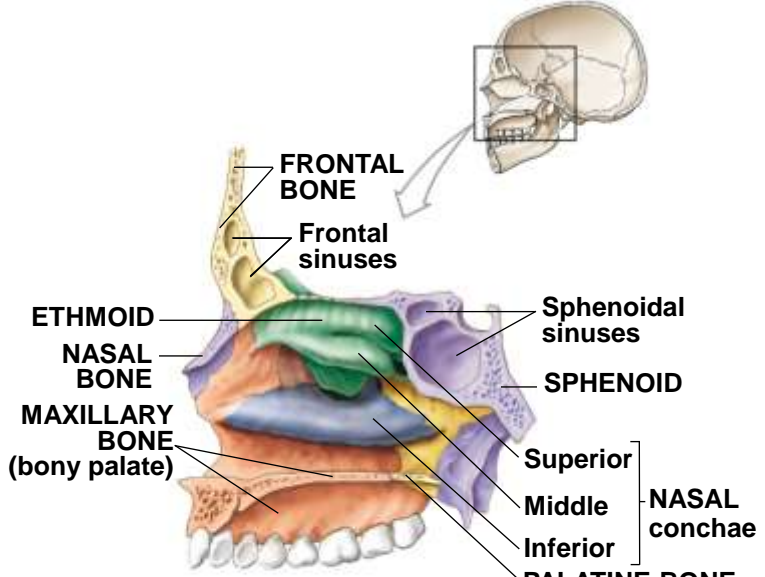
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(b) Sagittal section

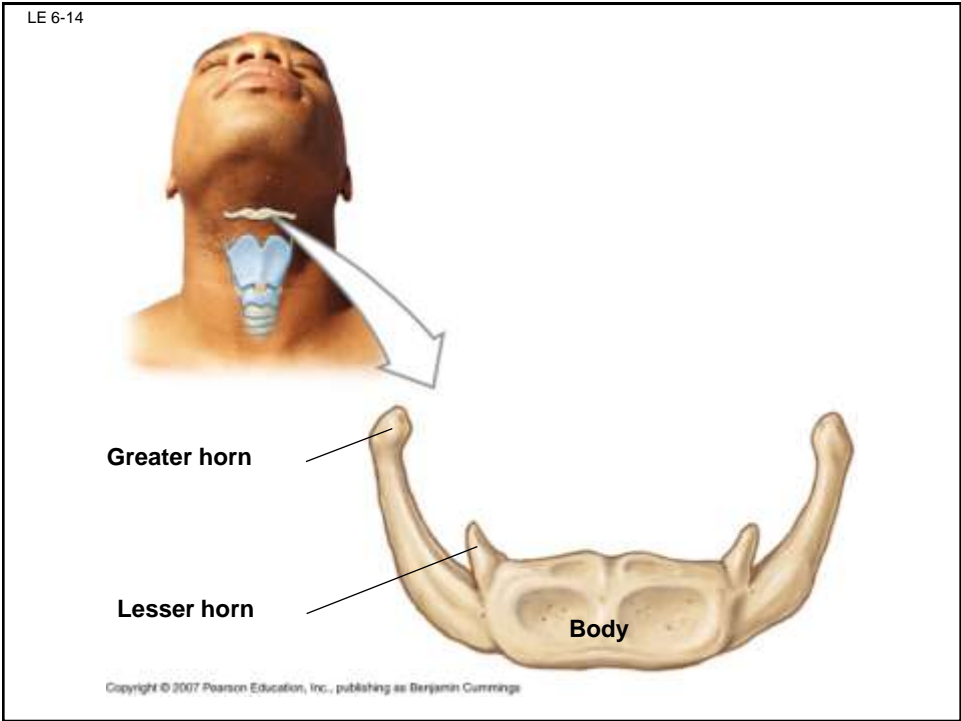
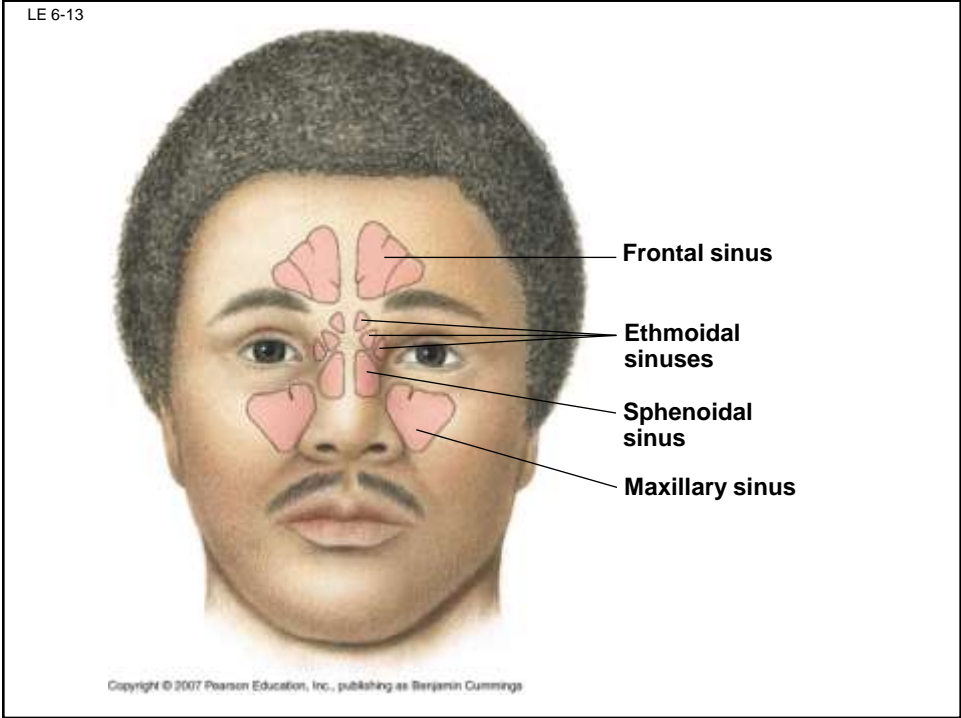
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(c) Sagittal section

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The Vertebral Column

- Vertebrae
 - Separated by intervertebral discs
 - 4 regions
 - Cervical: C1-C7
 - Thoracic: T1-T12
 - Lumbar: L1-L5
 - Sacral: S1-S5
- Sacrum
 - Several (5) fused vertebrae
- Coccyx
 - Rudimentary tailbone
 - ~ 4 fused vertebrae
- Function
 - Protect spinal cord and nerves

Figure 6.16



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Intervertebral Discs

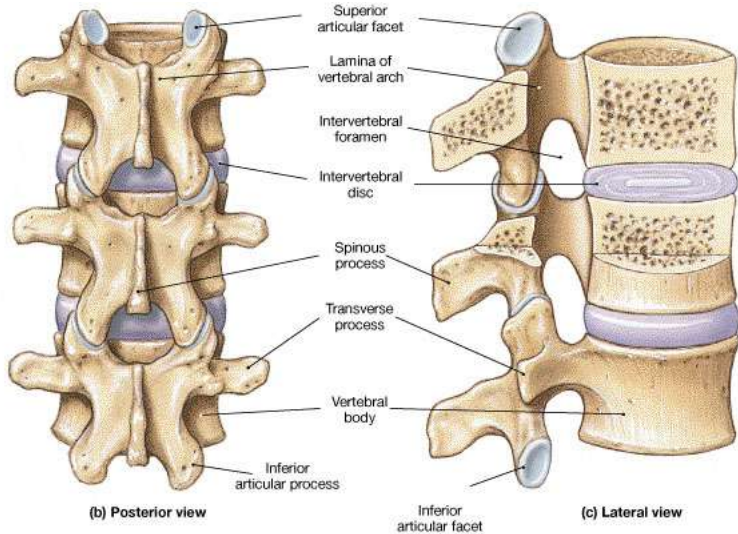
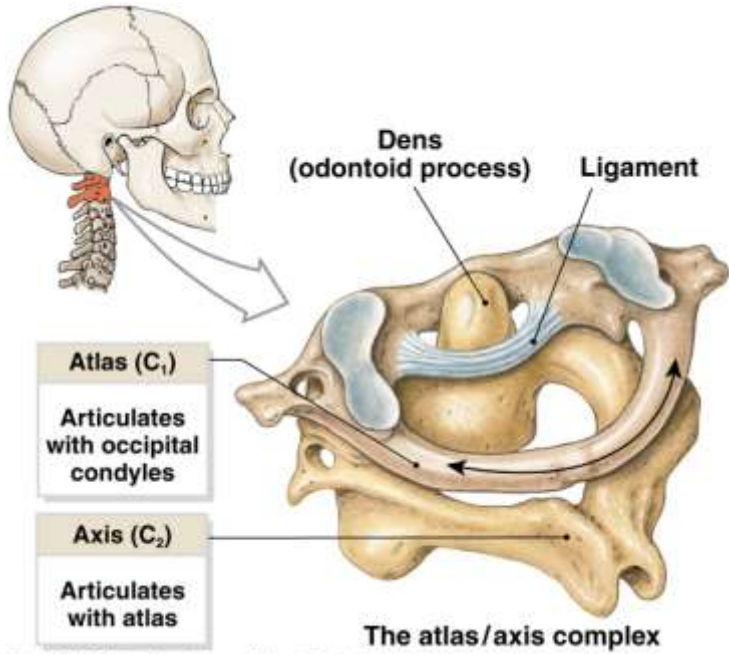
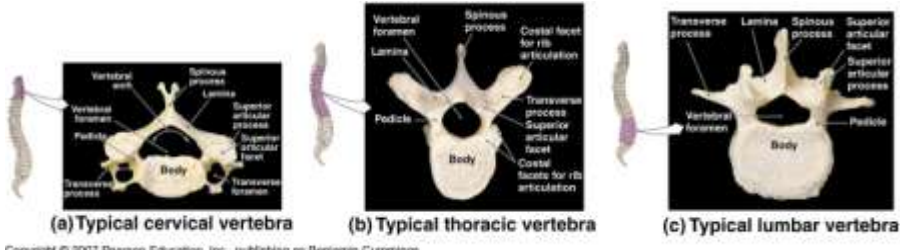


Figure 6.18



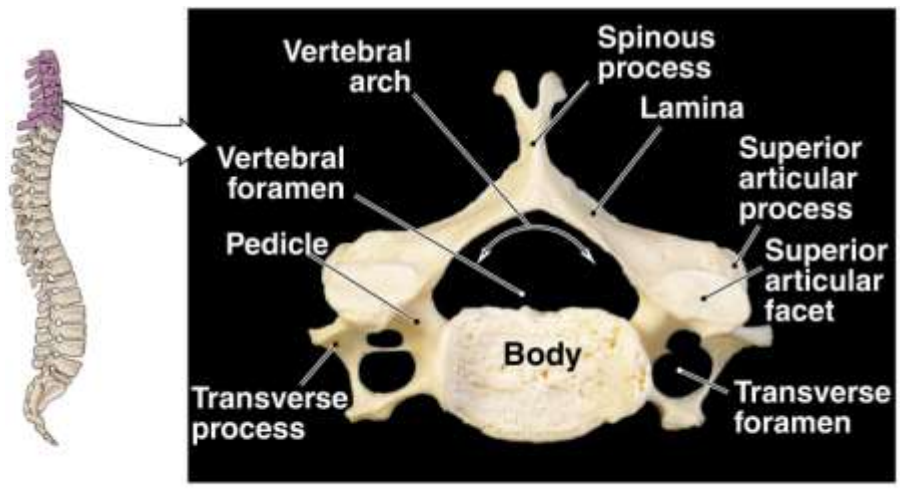
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Figure 6.17



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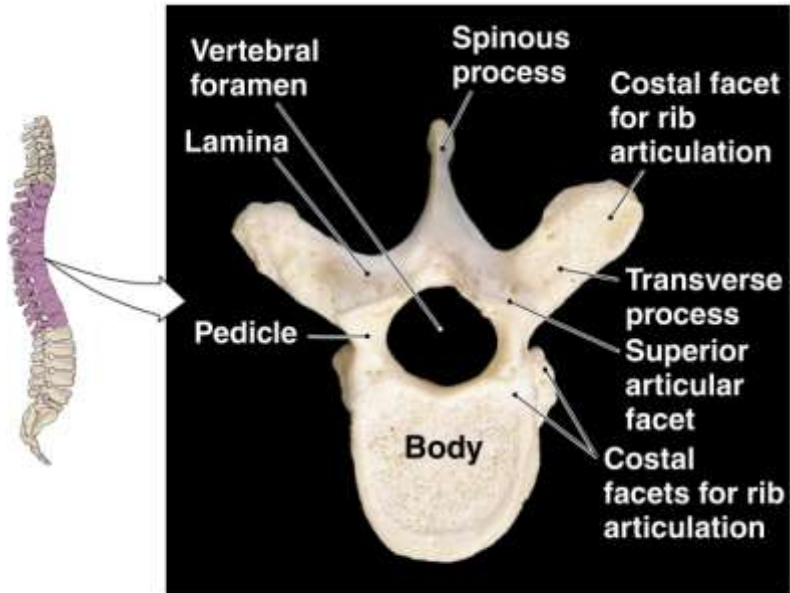
Figure 6.17a



(a) Typical cervical vertebra

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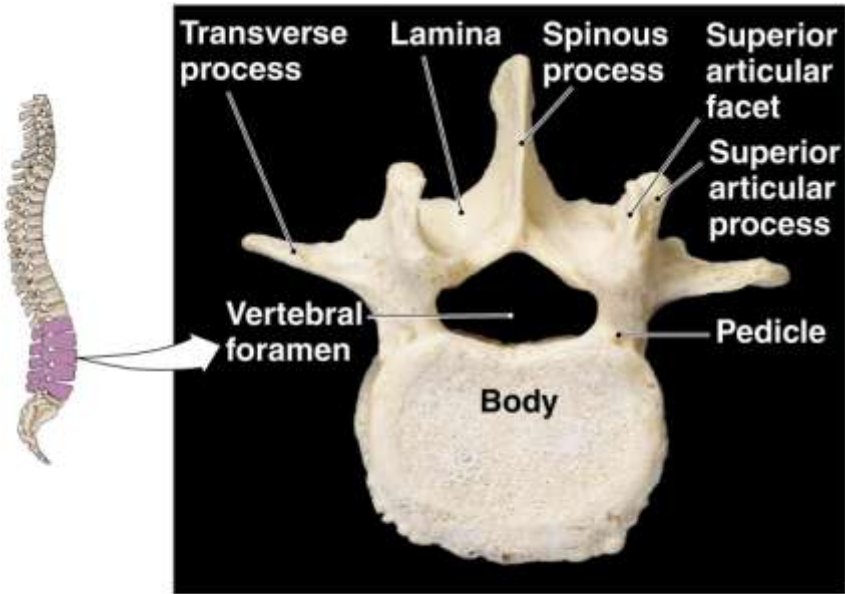
Figure 6.17b



(b) Typical thoracic vertebra

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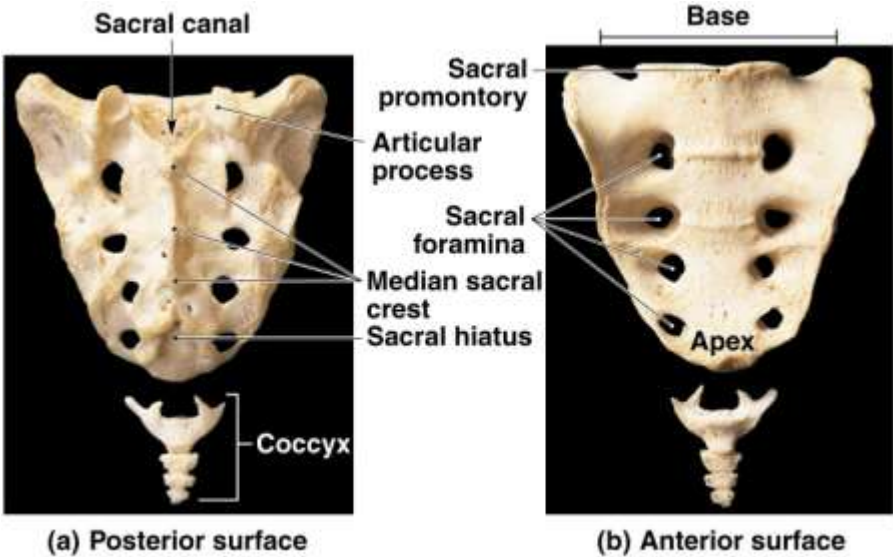
Figure 6.17c



(c) Typical lumbar vertebra

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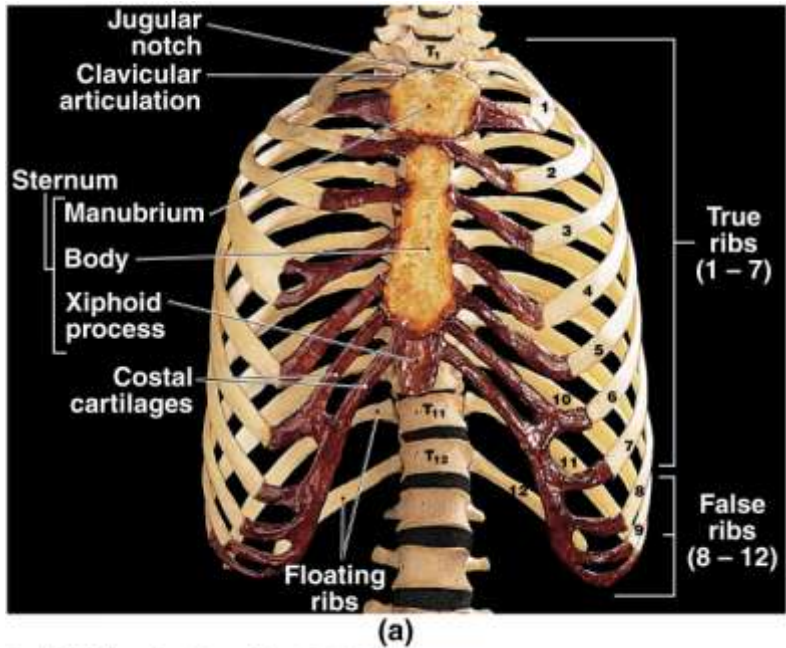
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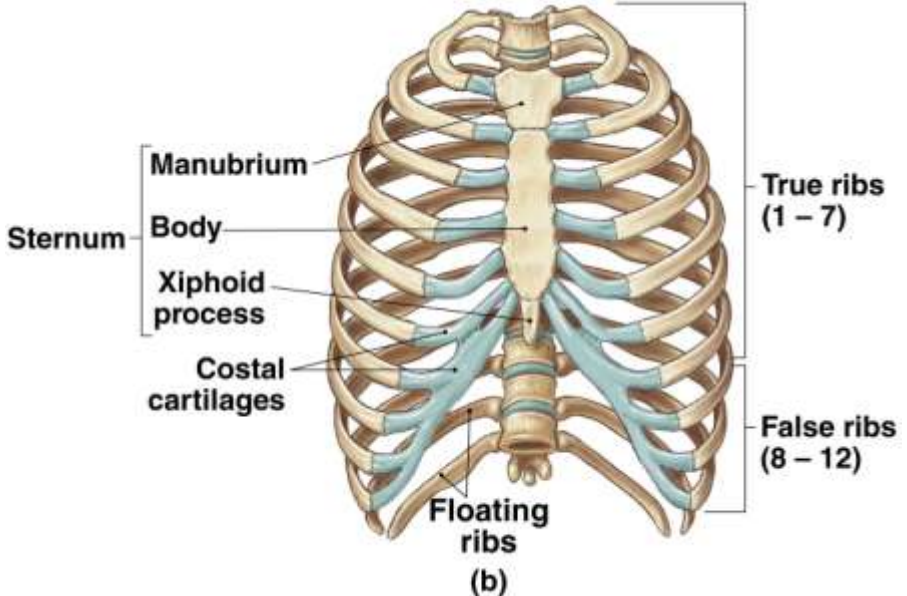
The Thoracic Cage

Figure 6.20a

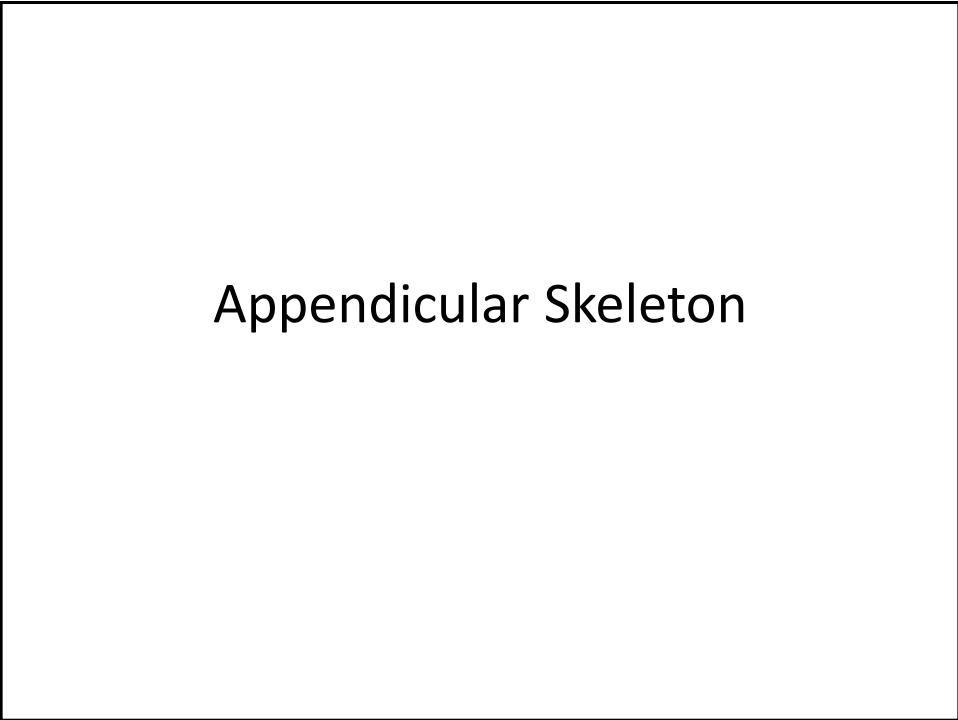
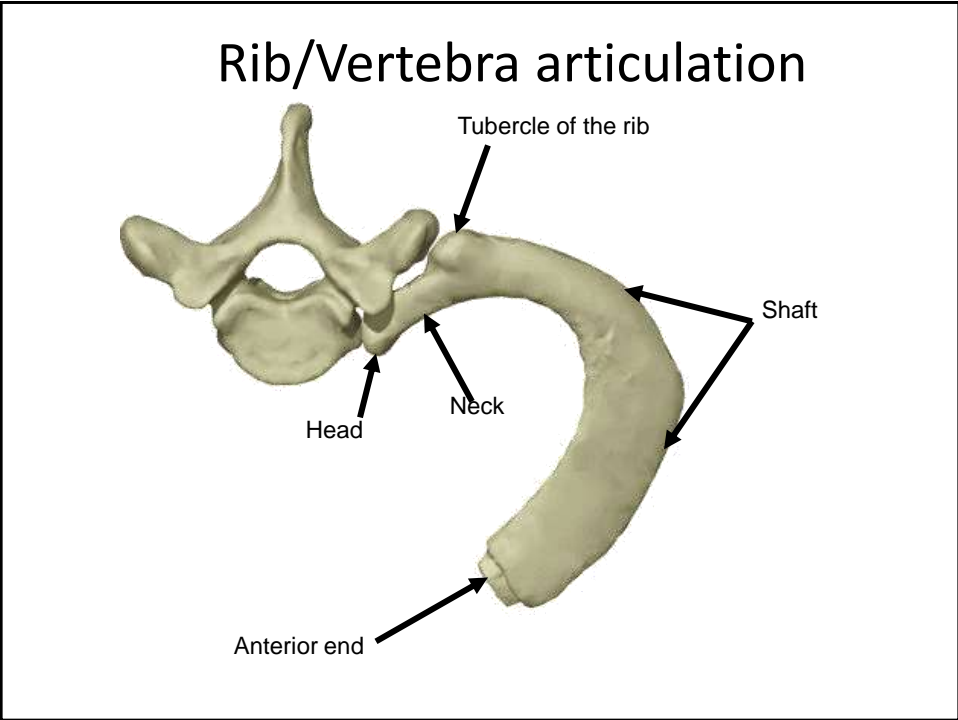


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Figure 6.20b



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Pectoral Girdle

- Scapula (shoulder blade)
- Clavicle (collar bone)
 - Attached to posterior ribs and sternum
- Function
 - Connects bones of arms to axial skeleton
 - Aids in arm movements

The Pectoral Girdle

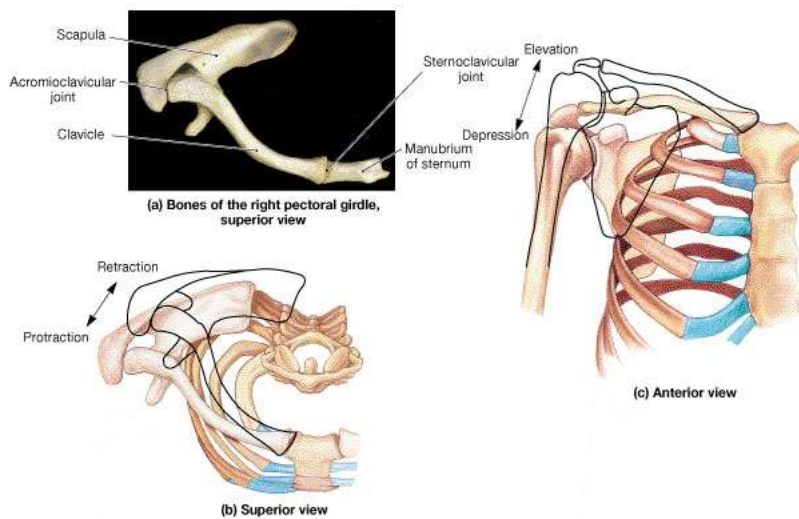
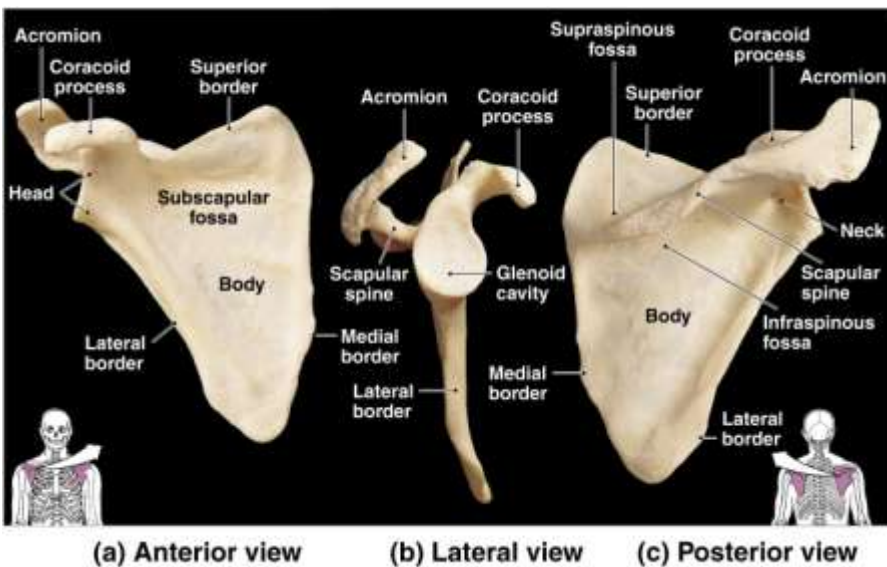


Figure 6.21



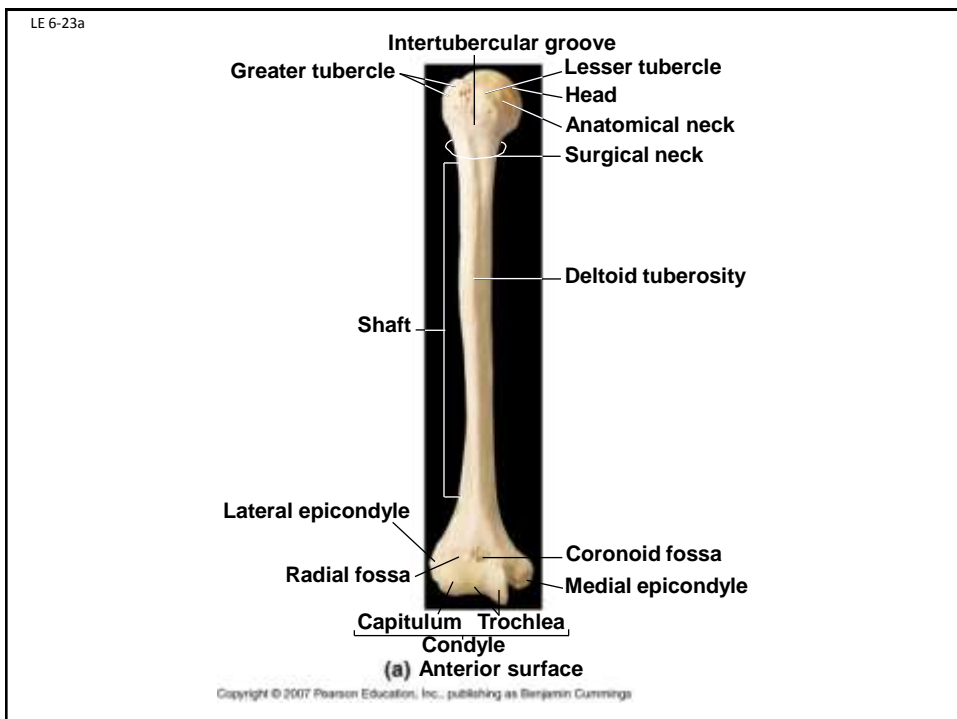
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Figure 6.22

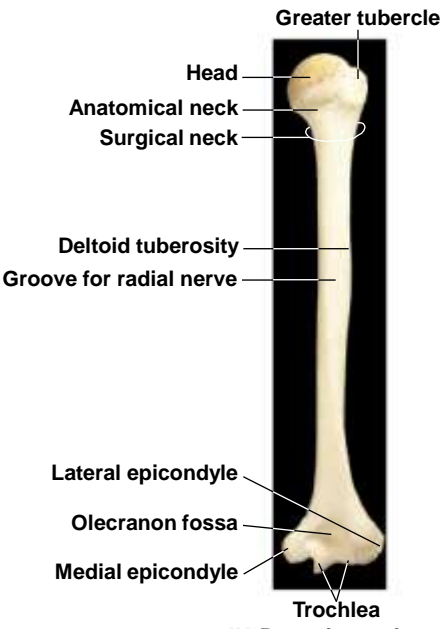


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The Upper Limbs

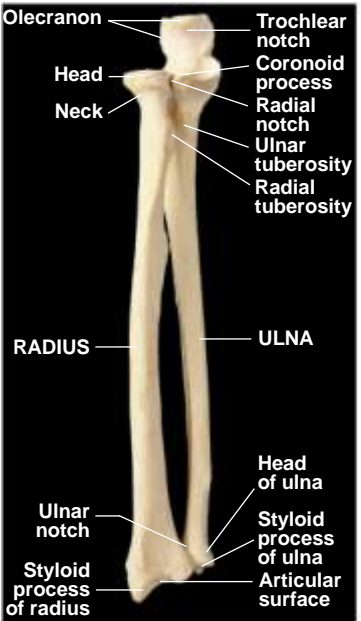


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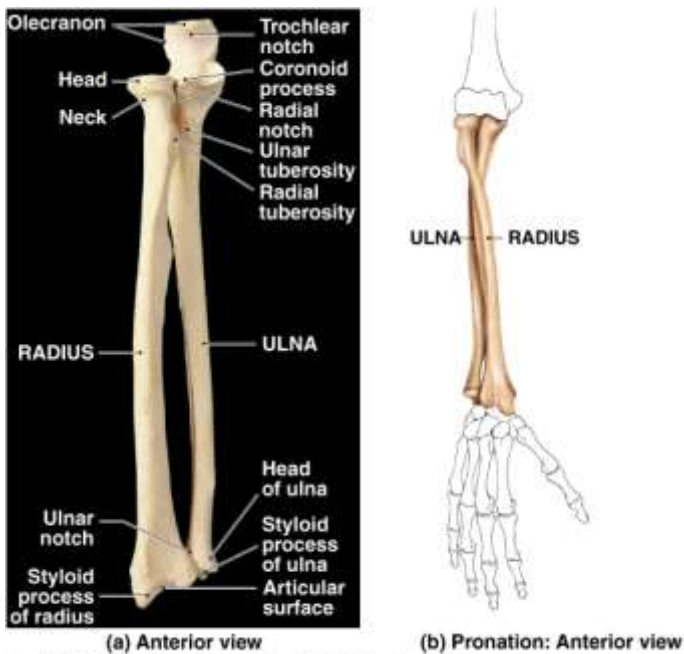
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(a) Anterior view

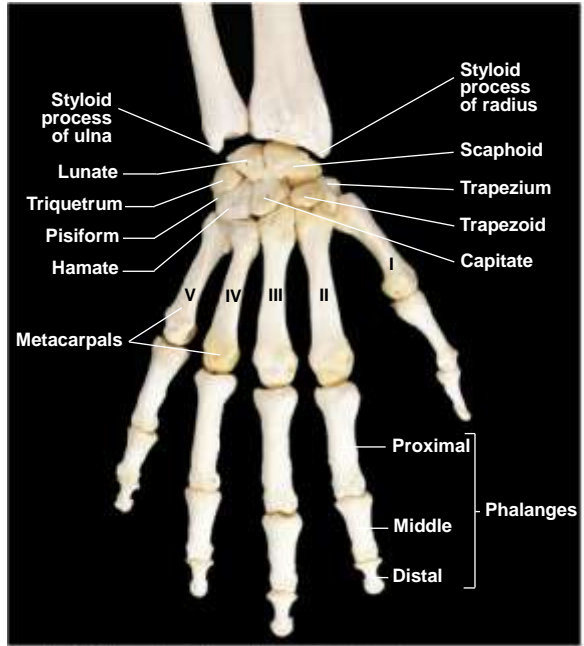
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Figure 6.24

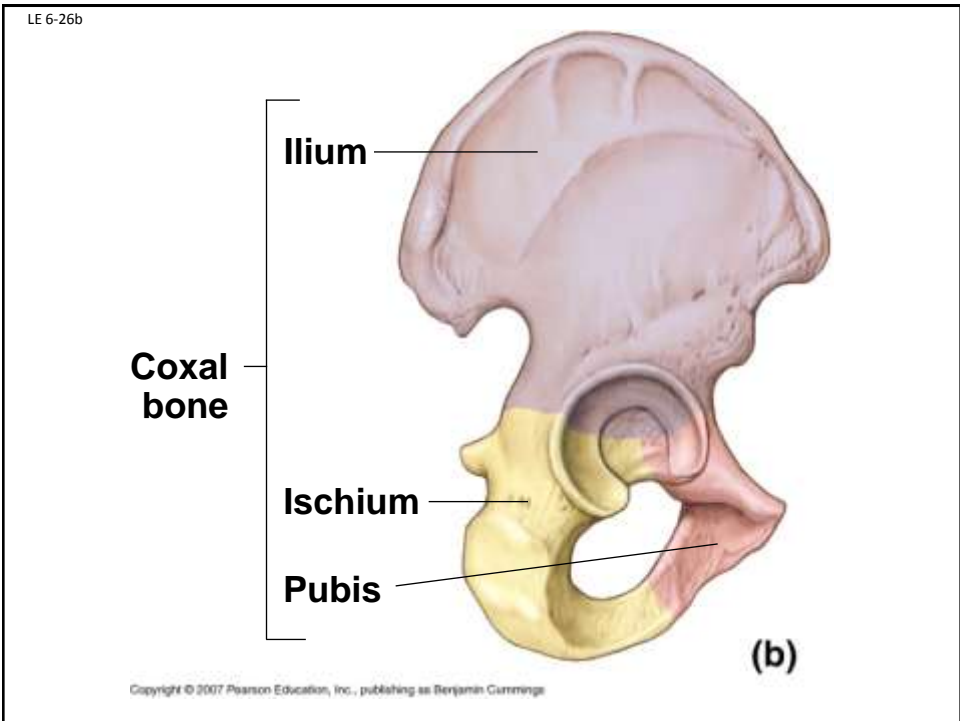
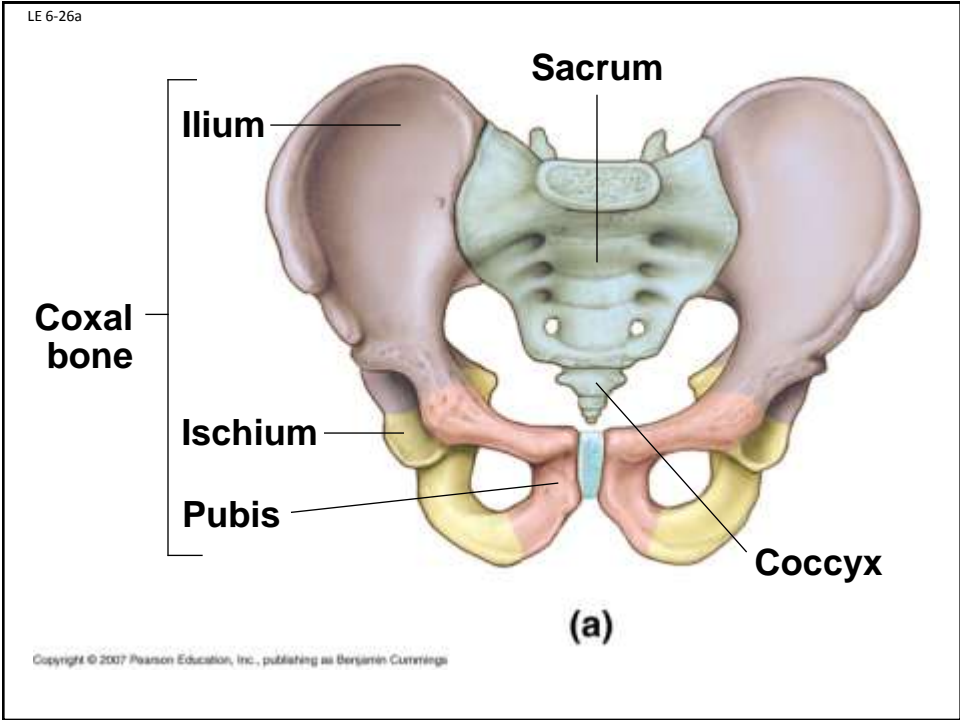


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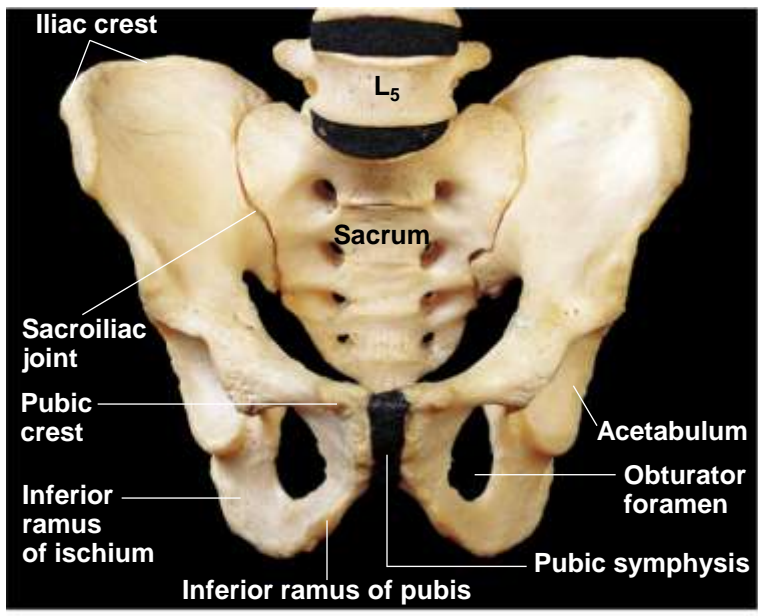
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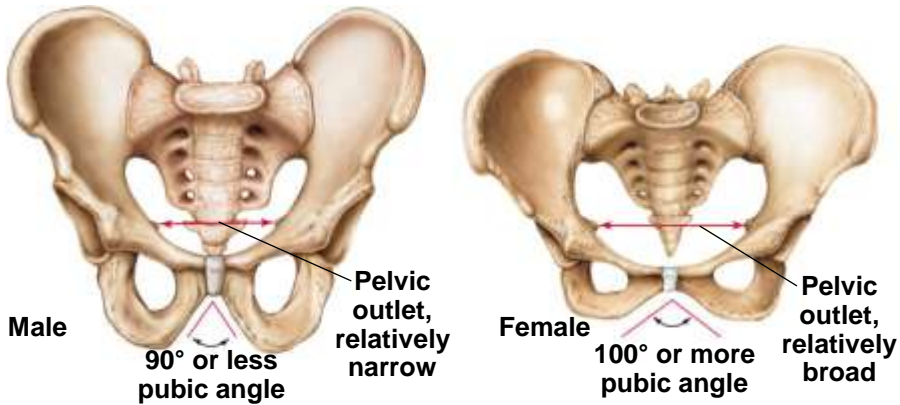


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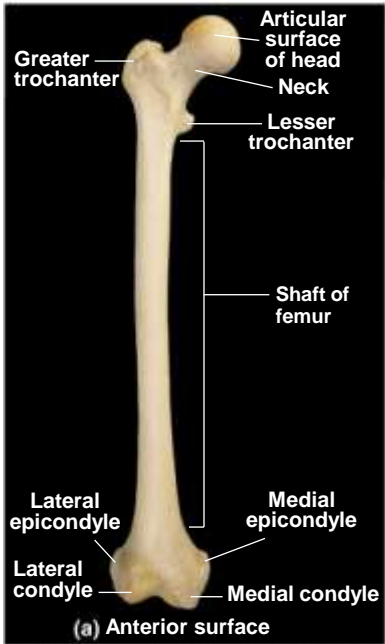
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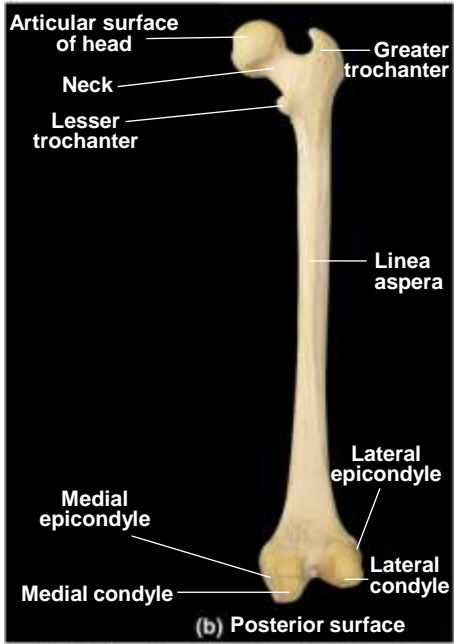
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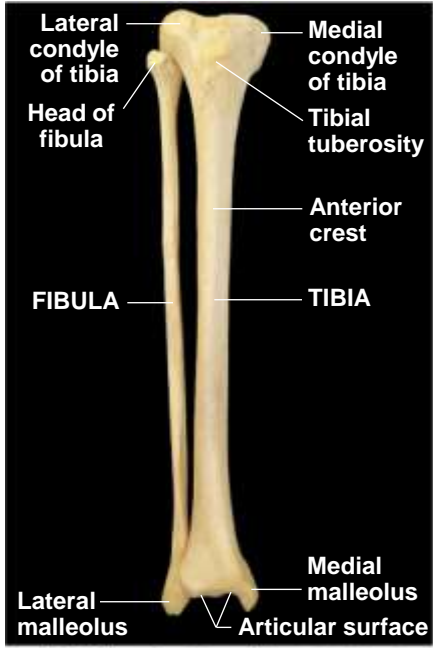
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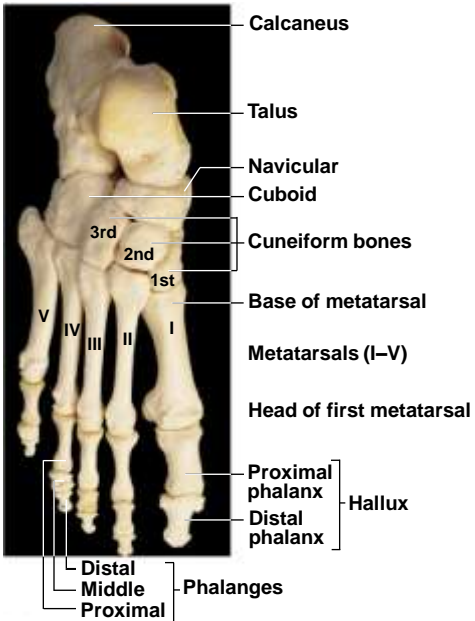
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(a) Superior view, right foot

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